

ENVIRONMENTAL PHYSICS  
GROUP

NEWSLETTER

No. 6

JULY 1993



THE INSTITUTE OF PHYSICS

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### Contributions

Suggestions, opinions or possible contributions to the newsletter will always be welcome and should be sent to the **Newsletter Editor** at the following address:

|                  |   |
|------------------|---|
| Dr Geoff Hassall | Department of Engineering Science<br>University of Oxford<br>Parks Road, Oxford OX1 3PJ<br>Tel: (0865) 273000 Fax: (0865) 273010<br>e-mail: ghassall@uk.ac.ox.vax |
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### EPG Membership

IoP/EPG membership enquiries are encouraged from both physicists and non-physicists with an interest in topics in "Environmental Physics". For further details contact:

|   |   |
|---|---|
| <b>The Membership Manager</b><br>(Mr David Foulkes) | The Institute of Physics<br>47 Belgrave Square,<br>London SW1X 8QX<br>Tel: (071) 235 6111 Fax: (071) 259 6002<br>e-mail: iop@uk.ac.ulcc |
|---|---|

My first task as the new editor is to thank Susanna Lithiby for her help and advice during the changeover period of the past few months. I have a hard act to follow but I hope I can continue her good work and produce an informative and interesting newsletter for our members.

I realise that the newsletter is often the only contact many of our members have with the activities of the EPG as a whole and with those of the Committee in particular, so I would like to ensure I am providing the information readers want to see in its pages. Of course, space is limited but any reasonable suggestions or requests for short pieces on topics related to environmental physics can be catered for and would be welcome. The same is true for the visits and meetings arranged by the EPG Committee. Suggestions for meeting topics or visits help us focus our limited time and resources on events which will be of most interest to members of the EPG. In October, for example, our new Chairperson, Dr John Stewart, is arranging a half-day visit to the Institute of Hydrology at Wallingford. More information is given in *Future Events*, but visits of this nature gives members an opportunity to experience, at first hand, environmental physics at work and to understand the many disciplines which fall into its scope.

The multidisciplinary nature of Environmental Physics must also be reflected in the mix of expertise the EPG membership can boast. However, increasing our numbers is important and is always near the top of Committee priorities. By the beginning of July we had just over 400 members of which between 50 and 60 had been placed on our Database of Expertise in Environmental Physics (**DEEP**). If anyone would like to register on DEEP they should return the form enclosed with the last issue of the newsletter to Ranjeet Sohki at the Warren Spring Laboratory in Stevenage.

Some of you will have noticed that on the contents page I have included the address of the Membership Manager for the IoP. Members are encouraged to advertise the activities of the EPG to colleagues whether they are physicists or not. We would like to involve both physicists and non-physicists in the EPG which they can do through the Institutes new *Affiliate* membership scheme (formerly *Subscriber*). It is specifically aimed at non-physicists interested in a specific area of physics and since environmental physics is an inherently multidisciplinary subject it is important that we include scientists and industrialists with a common commitment to environmental awareness. *Affiliate* membership gives chemists, biologists, engineers and many others an opportunity to bring their experience into play through a common channel thereby enhancing our ability to fulfill our rôle as a knowledgeable and impartial advisor on environmental matters.

*Geoff Hassall*

## Report of the Annual General Meeting for 1992

29 April, 1993

The Institute of Physics,  
Belgrave Square, London.

Tea was available from 6 pm with the meeting starting promptly at 6:15 pm. After an introductory welcome by the Vice-Chairperson, Dr Doug Peirson, the honorary secretary, Dr Alistair McCartney gave a brief report of the Groups activities over the past year. These consisted mostly of planning and organizing meetings, but also included responses to requests from Council or Institute Executive for advice on environmental issues. The Committee wishes to compile an index of members interests which would help formulate the Group's response to requests for information and opinion. The Group organised or sponsored seven meetings during the year, involving co-operation with one IoP Branch (Scottish) and three outside organisations. He also reported that the group is planning two meetings in 1993, *The Physics of Plant Environments* on 13 May (see the meeting report later in this newsletter) and *Inland and Coastal Water Quality'93: Measurement and Modelling* on 29 September and is co-operating in the "International Tyndall School" to be held in Ireland also in September.

## Election of Officers:

The following were elected unopposed:

Chairperson: Dr John Stewart, Institute of Hydrology  
Vice-Chairperson: Dr Douglas Peirson  
Honorary Secretary: Dr Alistair McCartney, Institute of Arable Crops Research

Dr Neil Roberts, Magnetic Resonance Research Centre, Liverpool and Dr Geoff Hassall, Department of Engineering Science, Oxford were elected to fill vacant Committee places\*.

This concluded proceedings for this years AGM. It was followed by a lecture entitled *The Physics of the World Ocean* delivered by Dr John Woods, Director of Marine and Environmental Sciences, NERC.

*Dr Alistair McCartney*  
*EPG Honorary Secretary*

\* Graham Alcock has since resigned from the Committee and the Committee has co-opted Dr Mike Smithson, Proudman Oceanographic Institute in his place.

## Greetings from the Education front.

In the past year the Education Sub-committee has been heavily committed to several initiatives in "A" level curriculum development. Members continue to contribute to the York University Science Education Group's "Science in the Environment", which is now reaching an advanced stage. We have also been involved in developing units for GNVQ Science (level 3), through the IoP's GNVQ Physics Panel. This Spring negotiations commenced between the Oxford and Cambridge Examination Board, and you will be pleased to know that they have commissioned us to submit an Environment Physics unit for their new "A" level Structured Science Scheme. The Sub-Committee is now working on this.

Since Easter 1993 discussions have been taking place within the London University Examinations Board regarding the possibility of modularizing their "A" level Science provision, in the wake of the huge uptake in their modular Maths scheme. We are in communication with the Physics Subject Officer of the Board regarding any changes that might result if in fact the provision does 'go modular'. Planning is under way for next Easter's Education Group Annual Conference, which will be held in Reading University 29-31 March 1994. Its theme will be "Environmental Issues in Physics Education", and both the Environmental Physics Group and the Royal Meteorological Society's Education Committee will be contributing towards this important activity. The keynote speaker will be Professor John Monteith.

If any of our readers would like to contribute to any of our activities or attend any of our Sub-Committee meetings, which are held three times a year in London, Sutton Bonnington (near Loughborough) and Manchester respectively, they would be very welcome.

*Peter Hughes*  
*Chair, EPG Education Sub-Committee*

To find out more about the activities of the EPG Education Sub-Committee, or would like more information about the Sub-Committee meetings, then contact Peter at the following address:

*Kingsway College, Sidmouth Street, London WC1H 8JH*  
*Tel: 071-278 0541 Fax: 071-833 8964*

In the first of a regular series of short articles from members of the steering committee, our newly elected chairperson, Dr John Stewart from the Remote Sensing Applications Section at the Institute of Hydrology, Wallingford, explains some of his own views about the aims and objectives of the EPG.

#### A view from the Chair

I was part of the steering committee which initiated the formation of the Environmental Physics Group in 1990 and I have just become the chairman of the Group after being a Committee member since 1992. I have also been a member of the Council of the Royal Meteorological Society and I am currently a member of the Meetings Committee of that Society.

One of my aims for the group is to heighten the awareness by the general public, as well as the membership of the Institute, of the importance of physics in solving many of the serious environmental problems that beset our planet. I think that many physics graduates do not consider environmental physics as a career, because it does not appear as glamorous as, for example, particle physics, and assume that it can be left to the geographers. From my career over the last three decades in meteorology and hydrology I have learnt that environmental physics besides being vitally important to many of the green issues of today, is also intellectually very stimulating. When working in this aspect of physics it often involves other disciplines such as biology and chemistry, therefore there is a need for further education which is another challenge.

Another aim of the group that I hope to encourage is the organisation of interesting meetings with high quality audio-visual presentations. Since the interests of Environmental Physics Group members overlap with those members of other Groups and Societies, many of our meetings are organised jointly, thereby ensuring wider publicity and larger attendance. Since environmental physics covers such a wide range of subjects, it is difficult to have meetings to cover all aspects. If there are any particular subjects that you would like to see covered, then please contact me. If you were also willing to act as an organizer, i.e. suggest titles of presentations and suitable speakers, then such a meeting could be incorporated into our programme within the next year or so.

*J B Stewart*

*The Institute of Hydrology, Wallingford*

#### The Physics of Plant Environments

13 May, 1993

Rothamsted Experimental Station

150 years ago John Bennet Lawes, owner of the Rothamsted Manor and manufacturer of "superphosphate" fertiliser, appointed a chemist, Henry Gilbert, to assist him in experiments on the growth and nutrition of crop plants. Rothamsted Experimental Station developed from this collaboration and is now the oldest agricultural research laboratory in the world. To help celebrate the 150th anniversary of the founding of Rothamsted the EPG, in collaboration with the Royal Meteorological Society, organised a one day meeting on "The Physics of Plant Environments". The subject of the meeting was particularly appropriate as Rothamsted has had a long association with "Environmental Physics". In 1913 the then director Sir John Russell appointed a young graduate physicist, B A Keen, to "... study the possibility of applying physics to agriculture with special reference to soils". The meeting reflected Rothamsted's past and present interests in the application of physics to agriculture, and it may be no coincidence that four of the six speakers (John Monteith, Edward Youngs, Bill Day and Alistair McCartney) have worked at Rothamsted at some time in their careers. The meeting consisted of six talks and the speakers' brief was to review not only the past but to look forward to the future.

The morning session, chaired by Jim Wallace from the Institute of Hydrology, immediately got down to "grass roots" with Edward Youngs (Silsoe College, Cranfield Institute of Technology) talking about the physics of the soil environment. We were reminded that the soil is an exceedingly complex medium and the behaviour of water, plant nutrients and gases are not easily modelled. John Monteith (Institute of Terrestrial Ecology) then took us into the plant itself when he talked about environment and evaporation. Work at Rothamsted on the use of water by plants goes back to the days of Lawes and Gilbert. Much of the most important work on evaporation was also done at Rothamsted, by Penman and later by Monteith himself. After an entertaining "history lesson" we were shown how Monteith's concept of surface resistance could be extended to provide more dynamically realistic vegetative surfaces in models of the Planetary Boundary Layer. Plants need light as well as water to grow and Bruno Andrieu (INRA, France) considered the complexity of understanding the transfer of solar radiation through the plant canopy. Plant canopies are heterogeneous and Bruno described novel approaches to modelling light régimes in such situations.

In the afternoon session, chaired by Brian Legg of AFRC Silsoe Research Institute (also ex-Rothamsted), we moved into the air above the crop. David Fowler (Institute of Terrestrial

Ecology) talked on gas exchange between the atmosphere and crop. The exchange of  $CO_2$  is vital for plant growth but plants play an important rôle in regulating the atmospheric lifetime of reactive pollutants ( $HNO_3$ ,  $NO_2$ ,  $SO_2$ ,  $HCl$ ,  $O_3$ ) in the atmosphere. David's talk outlined the major processes which regulate the exchange of gases between vegetation and the atmosphere and discussed micrometeorological methods used to study them. Staying in the atmosphere, Alistair McCartney (Rothamsted) talked on the dispersal of particles in crops. Fungal spores which spread crop diseases and agricultural spray drops are dispersed by the same physical mechanisms. Turbulence in natural winds plays an important rôle in dispersal of particles and methods of modelling its effects were discussed. Finally, many crops are grown in "protected environments" which present problems of their own. Bill Day's (AFRC Silsoe Research Institute) talk on Controlled Environments considered not only the physics involved but how practical control measures in commercial production systems are constrained by economics. Strategies for most profitable production must use our understanding of the processes that determine the environment and influence production and costs.

In addition to the six lectures there were eight trade exhibits on display during the lunch intervals. The meeting also received additional sponsorship from Campbell Scientific, PP Systems and Delta-T Devices.

The meeting was attended by about 130 delegates half of which were undergraduate or graduate students.

*Alistair McCartney*

*Rothamsted Experimental Station*

#### From the Institute.

The IoP is currently advertising a **New Service for Job-Seeking Members** and would like to hear from those interested in participating in a scheme where members details are placed on a database. By using standardised application and search forms plus comprehensive work codes, the database should meet both employer's and employee's requirements as closely as possible. When 200 members have registered their interest, the Institute will begin publicising the service to employers of physicists, offering to assist them in filling vacancies.

Any member interested in participating in this scheme should contact **Lisa McKay** at The Institute of Physics in Belgrave Square, London. You will then be sent further details and an application form which is returned to Lisa along with your curriculum vitae. When a recruiter with a specific need finds a match on the database, your CV will be forwarded for the employer's perusal and you may then be contacted for interview.

The IoP also offers an additional range of employment-related services including an informal careers advice network, CV advice and typesetting, counselling, Professional Briefs on a range of employment matters and there is always the Member's room at IoP headquarters containing journals and quality, national dailies. In addition, members are entitled to phone, fax and photocopying facilities at cost price.

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#### **TIGER: Cell damage from Ozone Depletion.**

A recent joint press release from the AFRC and the NERC informs us of a new £1 million research programme being launched to determine the response of natural and agricultural environments to the anticipated increase in UV-B radiation due to ozone depletion. It is being funded by both the AFRC and the NERC at a time when the general response to claims of significant damage resulting from a reduction in Ozone levels in polar regions is under examination from both the environmental pressure groups, the United Nations and other scientific bodies. A recent article in the *Sunday Times* (20 June, 1993) summarised the results of a recent investigation into claims of such damage in southern Chile. The National Radiological Protection Board (NRPB) published a report contradicting claims of pollution damage to the Ozone layer. This follows doubts about the scientific validity of recent UN predictions that sustained depletion of the Ozone layer will lead to a significant increase in recorded incidents of skin cancers and eye cataracts in affected areas.

It appears to be a growing opinion that strict implementation of the Montreal Protocol in which many of the Ozone destroying substances will be phased out by the turn of the cen-

tury will allow the atmosphere to recover sufficiently before any harm can be detected in populated areas. Research programmes such as that announced by TIGER are essential if we are to fully understand a clearly complex and contentious issue. Further information about the AFRC/NERC programme and the groups participating in this work can be obtained from:

*The TIGER Programme Office, Institute of Hydrology, MacClean Building, Crowmarsh Gifford, Wallingford, Oxfordshire OX10 8BB Tel: (0491) 838800 Fax: (0491) 838097*

#### UK Draft VOC Strategy Document

In the last issue of the newsletter I mentioned the existence of a consultation document available from the Air Quality Division at the Department of the Environment. It set out the action being taken in the UK as part of an international effort to reduce emissions of Volatile Organic Compounds (VOC's) under obligations agreed under a 1991 UNECE protocol. The DoE had anticipated issuing a final version of this document by the end of March. However, it will now not be available until at least September this year. For further information contact:

*Air Quality Division, Department of the Environment, Romney House, 43 Marsham St., London SW1P 3PY (Tel: 071-276 8197)*

#### SETAC-UK

The Society of Environmental Toxicology and Chemistry (SETAC) is a professional society with membership from a wide range of disciplines such as chemistry, toxicology, biology, ecology, atmospheric sciences, health sciences, earth sciences and environmental engineering worldwide. It was established to promote the multidisciplinary approach to solving problems resulting from the impact of technology and chemicals in the environment. SETAC-UK is a regional branch of SETAC-Europe, and both were inspired by the success of SETAC in North America. Like the EPG they aim to foster links between government, industry and academia by providing an active forum for discussion through conferences and workshops. Enquiries regarding the activities or membership of SETAC-UK can be obtained from the SETAC-UK Honorary Secretary:

*Dr Donald J Baird, Institute of Aquaculture, University of Stirling, Stirling FK9 4LA Tel: (0786) 467926 Fax: (0786) 472133*

#### UN Environment Programme:

##### Industry and Environment Programme Activity Centre

The UN Environment Programme Industry and Environment Programme Activity Centre (UNEP IE/PAC) has, for a number of years, played an important role in promoting environmentally sound industrial development through technology and information exchange. IE/PAC was known as the Industry and Environment Office (IEO), but in 1992 it was given greater autonomy by establishing it as a *Programme Activity Centre* with the remit to help promote the global exchange of environmentally sound technologies. To do this it has to bring together industry, governments and non-government organisations with the common objective of promoting what is now often referred to as "Clean Technology". Through IE/PAC, these objectives are being actively pursued by defining and encouraging the inclusion of environmental criteria in industrial development, by helping to formulate and to implement the future policies and strategies needed for sustainable industrial development as well as promoting the use of clean technologies and stimulating the exchange of information essential for such development to occur.

Information about the activities and publications of the IE/PAC are available from:

*United Nations Environment Programme IE/PAC,  
39/43 Quai André Citroën, 75739 Paris Cedex 15, France  
Tel: ++33-(1)-4058 88 50 Fax: ++33-(1)-4058 88 74*

#### British Library Environmental Information Service

The British Library offers a comprehensive reference and information service which provides a central point of access to all British Library collections and services where they have specialists dealing with related subjects such as chemistry, engineering, biotechnology and business. The *Environmental Information Service* aims to help industry, the public sector and non-governmental organisations to answer questions about pollution, conservation, clean technology and other topics related to the environment. They also cover scientific, technical, commercial and legal aspects giving a comprehensive coverage of topics of interest to the environmental scientist.

Enquiries can be made by telephone, fax, or in person and details of the services available can be found in their leaflet entitled, "Guide to Environmental Sources at the British Library". This and several other leaflets are available in an information pack from:

*The British Library, 25 Southampton Buildings, London WC2A 1AW.*

**The UK Environment**

Department of the Environment, HMSO.

Editor: Alan Brown, Assisted by Chris Groom, Diane Lewis, Christine Rabjohns, David Moir (1992). 258 pages. £14.95

This is the first edition of a new report on the environment as promised in the environment White Paper "This Common Inheritance" (DOE 1990). The book is intended for the non-technical reader and much of the information is presented in the form of charts, simple tables and explanatory text. There are 230 figures, in comparison with 60 tables, so it is misleading to call it a statistical report. Detailed data are available on disk and supplementary tables on some subjects can be found in *Digest of Environmental Protection and Water Statistics*. The latter is more up-to-date: fluoride concentrations in the Digest are for 1992 in comparison with 1990 in *The UK Environment*. The data limitations are acknowledged and the report is intended both to indicate where there are gaps and to identify, with readers' assistance, what else is required. Future editions are expected 'at regular intervals'.

The report is divided into 17 chapters including a brief introduction to the UK climate; nine chapters on the main environmental resources (air, land, water, wildlife); four chapters on specific pressures on the environment (waste, noise, radioactivity) and three summary chapters, on pressures (mainly transport and energy), public attitudes and expenditure (e.g. on pollution abatement). Chapters vary in length from five pages (Coast erosion, flooding and sea level change) to 24 pages (Land use and land cover). Of necessity, some subjects are covered in only one paragraph, because of the vast range of issues tackled by the publication: the cover pictures include a badger and traffic congestion.

This is a Government publication. The information summarised is mainly from official sources and the text is most anodyne on sensitive subjects (soil erosion and energy efficiency) and more inspirational on popular issues like birds. It is a brave first attempt and provides a useful primer on a wide range of subjects. However, it does not constitute an adequate reference for many researchers or students as it merely identifies the first stage for further reading. In future years, the value of the series will depend upon the integrity of the compilers and the extent to which it includes important information, which Government might prefer was excluded.

Dr Brenda Boardman  
Fellow in Energy Efficiency

Environmental Change Unit,  
University of Oxford.

**EPG Visits:**

Institute of Hydrology, Wallingford

28 October 1993

This is an afternoon visit to the Institute of Hydrology at Wallingford. Numbers are limited to 40 so if you wish to attend you should contact **J B Stewart** at the IoH, Crowmarsh Road, Wallingford, Oxon, OX10 8BB (Tel: 0491 838800) and he will furnish details of the starting time and meeting point.

**EPG Meetings:**

International Tyndall School

11 - 19 September, 1993

John Tyndall FRS (1820-93) was an environmental scientist of the 19th century and this meeting celebrates the centenary of his death. It includes a major environmental conference plus a number of Radon Day Schools for schools and the public.

Dr Norman McMillan, Carlow Resource Centre, Ireland.

Tel: 010-353-503 32218, Fax: 010-353-503 43787

Inland and Coastal Water Quality'93

29 September, 1993

A reminder about the one day meeting to be held at the **Warren Spring Laboratory** in which the latest research developments in mathematical modelling and measurement of the quality of our inland coastal waters will be discussed. Further details from:

Dr Ranjeet Sohki, Warren Spring Laboratory,

Gunnels Wood Road, Stevenage SG1 2BX (Tel: 0438 741122)

The Global Energy and Water Cycle

18 - 22 July, 1994

This meeting is organised by the UK GEWEX Forum and is supported by The Royal Society, The Royal Meteorological Society, The British Hydrological Society, The Remote Sensing Society and others including the Environmental Physics Group. It will be held at the **Royal Society** in London and will consist of both invited and contributed papers and posters covering areas related to the water and energy cycle. Current subject headings include atmospheric processes, precipitation, surface-atmospheric interactions over land and sea, continental-scale water budgets, and global modelling. A call for papers will be issued in Summer 1993, the deadline for abstracts will be 31 October 1993, followed by the full programme in early 1994. Further details from:

The Chairman of the Local Organizing Committee, c/o The Royal Meteorological Society,  
104 Oxford Road, Reading, Berks RG1 7LJ

## Other Meetings:

## Environment Northern Seas

August, 1993

The second International Environment Northern Seas Conference and Exhibition is to be held in The Siddis Centre, Stavanger, Norway from 24-27 August, 1993.

"In 1991 ENS established itself as a major forum for leading environmentalists, industrialists, bankers, government officials and scientists to meet and discuss central environmental issues and trends, both worldwide and in the ENS region." (*ENS Programme Handbook*)

ENS Secretariat, PO Box 410 N-4001, Stavanger

Tel: ++47-4-55 8100 Fax: ++47-4-55 0525

## British Association Annual Science Festival

August/September, 1993

This year the annual science festival called *Science for Life* is to be held at Keele University from 29 August to 3 September. The main programme is available from:

The Annual Meeting Office, British Association for the Advancement of Science

Fortress House, 23 Saville Row, London W1X 1AB

Tel: 071-494 3326, Fax: 071-734 1658

## British Soil-Water Physics Group

September 1993

A discussion meeting on *Validation of Soil-Water and Solute Transport models using field data* will be held on Wednesday, 22 September 1993 at the Institute of Hydrology, Wallingford. Further details from:

J D Cooper, Institute of Hydrology, Crowmarsh Gifford,

Wallingford, Oxon OX10 8BB (Tel: 0491 838800)

## Partnerships for Change

September, 1993

This meeting was previewed in the last edition of the newsletter and detailed information is now available from the Department of the Environment. It will be held in Manchester from 20-22 September, 1993 and is a major international conference announced by John Major at the Rio 'Earth Summit' in 1992. Further details from:

Craig Jones, Department of the Environment,

Room A305, Romney House, 43 Marsham Street, London SW1P 3PY

Tel: 071-276 8168 Fax: 071-276 8861

## Perspectives on the Environment 2: Research and Action September, 1993

The Interdisciplinary Research Network on the Environment and Society (IRNES) is supported by the Global Environmental Change (GEC) Programme of the ESRC and will be holding this meeting at the University of Sheffield from 13-14 September. Details are available from:

Sue Elsworth, School of Law, University of Warwick, Coventry CV4 7AL

Fax: 0203 524105

## Phosphate and the Environment

October, 1993

Organised by the Society of Chemical Industry (SCI) Agriculture and Environment Group. This meeting will be held at 14/15 Belgrave Square, London on 19 October, 1993.

Conference Secretariat.

Tel: 071-235 3681 Fax: 071-823 1698

## Exhibitions:

## Environmental Technology '94

March, 1994

This is a review as well as a notice for a future event because I omitted to mention *Environmental Technology '93* in our last issue which was held from 23-25 March at the NEC in Birmingham. ET'94 will also be held in the NEC from 22-24 March, 1994 and promises to be bigger and better than ET'93, according to Reed International who organized this years event.

There can be no doubt that ET'93 was an impressive affair with a wide range of environmental expertise on display from available technology to current research and legislation. Around 9000 visitors passed through the exhibition over the three days. However, the event showed not only the hardware but also provided the opportunity to determine developments in both technology and legislation through seminars and expert briefings; about 1600 delegates took advantage of this facility. Other special features during the exhibition included exhibitors from Scandinavia and from three provinces of Atlantic Canada, i.e. New Brunswick, Newfoundland & Labrador and Nova Scotia. A *Recycling Feature* gave an overview on practical steps to recycling such as materials collection, product development, consultancy and legislation. Copies of the ET'93 exhibition catalogue can be obtained by calling 081-948 9912 and is a useful reference list of companies involved in the development and implementation of environmental technology. GH



**Chairman:**

Dr John Stewart  
Remote Sensing Application Section  
Institute of Hydrology  
Wallingford, Oxon OX10 8BB  
Tel: (0491) 838800 Fax: (0491) 832256

**Vice Chairman:**

Dr Douglas Peirson  
(formerly Environment and Medical Sciences Dept., Harwell)  
18 Nuneham Square  
Abingdon, Oxon OX14 1EH  
Tel: (0235) 520454

**Honorary Secretary:**

Dr Alistair McCartney  
Plant Pathology Department  
Rothamsted Experimental Station  
Harpenden, Herts AL5 2JQ  
Tel: (0582) 763133 Fax: (0582) 760981

**Members:**

Dr Peter Dagely  
Department of Earth Science  
University of Liverpool

Professor John Harries  
Space Science Department  
Rutherford Appleton Laboratory

Dr Geoff Hassall<sup>†</sup>  
Department of Engineering Science  
University of Oxford

Mr Peter Hughes  
Science Department  
Kingsway College

Dr Neil Roberts  
Magnetic Resonance Research Center  
University of Liverpool

Dr Mike Smithson<sup>‡</sup>  
Proudman Oceanographic Institute  
Liverpool

Dr Ranjeet Sokhi  
Marine Pollution and Bulk Materials Division  
Warren Spring Laboratory

Dr Anne Wheldon  
Energy Group, Department of Engineering  
University of Reading

Professor Edward Youngs  
Silsoe College  
Cranfield Institute of Technology

<sup>†</sup> Newsletter Editor: See contents page for full address.

<sup>‡</sup> Graham Alcock has resigned from the Committee and the Committee has co-opted Dr Mike Smithson, Proudman Oceanographic Institute in his place.